

REMARKS

Claims 1-6 have been rejected by the Examiner under 35 U.S.C. § 102(b) as being anticipated by Hackleman (U.S. Patent 5,640,183). This rejection is respectfully traversed.

The present invention is directed to a method and apparatus for printing a substrate with an inkjet printing device comprising a first printing stage in which a strip of pixel rows is provided with ink drops, whereafter the printhead is displaced in a direction substantially parallel to the pixel columns and a second printing stage in which the strip is provided with supplementary ink drops, wherein the printhead is displaced over a fixed distance such that the same is substantially equal to the width of one pixel row.

According to the present invention, it has been found that the negative effect on printing results induced by distributed faulty nozzles can be more adequately masked by applying a fixed displacement of the printhead, instead of using a displacement that has to be chosen for each subsequent print swath. As noted on page 2, lines 20-26 of the present application, the selection of the position occupied by a second (and any subsequent) printhead is no longer a random choice but is made with a fixed displacement over a distance equal to the width of one pixel row. It has been found that this provides better masking of any printing fault as a result of a deviation of a nozzle. The present invention is based on the realization that systematic deviations of the nozzles can be

masked more satisfactorily by a systematic distribution of the printing faults due to such deviations, then is possible with a random distribution of the printing faults.

The Hackleman reference discloses a method wherein the printhead, in order to print a next swath, is displaced over a distance which has to be chosen from a number of possible distances. Please see in this regard column 4, lines 7-18 of the Hackleman patent, where it is stated that to print the next swath, or to print the second dot in the dotted pixels in a multiple dotting print mode, a different set of one hundred nozzles is selected. A similar disclosure can be found in column 5, lines 11-16. The idea behind this method is that by randomizing the selection of nozzles that is being used for printing, the effect of faulty nozzles is minimized (see column 3, lines 61-64). The Hackleman method, however, suffers from a number of disadvantages, the most important one being that for printing the next swath, the printhead has to be displaced over a small distance which is altered each time. This imposes high demands on the mechanical displacement system of the printhead versus the receiving material. Please see in this regard page 2, lines 7-14 of the present application, where it is stated that a significant disadvantage of the prior art system is that the printhead must be very accurately displaced, prior to the second printing stage, with respect to the substrate over a distance which, depending on the choice of the second sub-row of adjoining nozzles, varies with the width of 0.1

or a number of pixel rows. A shift of this kind is achieved by displacing the paper by means of a motor. These small but very accurate shifts, which are selected at random, mean that the accuracy of the paper transport must meet stringent requirements. As discussed hereinabove, it has been found, according to the present invention, that the negative effect on printing results induced by distributed faulty nozzles, can be more adequately masked by applying a fixed displacement of the printhead instead of using a displacement that has to be chosen from each subsequent print swath. Such a fixed displacement is in complete contrast with the teachings of the Hackleman patent.

As the Examiner will note, claims 1 and 6 have been amended to recite the differences between the present invention and the Hackleman patent.

Accordingly, in view of the above amendments and remarks, reconsideration of the rejection and allowance of the claims of the present application are respectfully requested.

Conclusion

Should there be any outstanding matters that need to be resolved in the present application, the Examiner is respectfully requested to contact Mr. Joseph A. Kolasch (Reg. No. 22,463) at the telephone number of the undersigned below, to conduct an interview in an effort to expedite prosecution in connection with the present application.

Pursuant to the provisions of 37 C.F.R. §§ 1.17 and 1.136(a), the Applicant respectfully petitions for a two (2) month extension of time for filing a response in connection with the present application and the required fee of \$410.00 is attached hereto.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37 C.F.R. §§ 1.16 or 1.17; particularly, extension of time fees.

Respectfully submitted,

BIRCH, STEWART, KOLASCH & BIRCH, LLP

By 

Joseph A. Kolasch, #22,463

JAK/clb

P.O. Box 747
Falls Church, VA 22040-0747
(703) 205-8000